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6 REPORT AND RECOMMENDATIONS ON

UNIT PROGRAM
(PR-4107),

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WAR DEPARTMENT
The Adjutant General's Office
Personnel Research and Procedures Branch
Personnel Research Section



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PBS Report No. 747
Project No. 4107
CIN/asj
29 August 1947

INTERIM REPORT AND RECOMMENDATIONS ON STUDY ON THE
APPLICATION OF PERSONNEL RESEARCH
TO UMT PROGRAM
(PB-4107)

I. INTRODUCTION

D/F from D/P&A to TAG, "Study on the Application of Personnel Research to UMT Program," 16 June 1947, (WDGPA 353 UMT) reviews previous action and directs preparation and submission of a long-range study on "the problem of applying to the UMT Program the best possible personnel management principles, particularly including personnel testing or measuring devices," using existing Army personnel tests wherever possible and projecting as a recommendation any new personnel research instrument or device required for application of sound personnel management. The directive calls special attention to:

A. Selection for branch training as compared with previous efforts to select for specific MOS training.

B. Selection for certain UMT options where military confirmation is required, with consideration to the problem of selection for options involving subsidized technical or college training. This will necessitate development, as assumptions, of a list of the types of training to be subsidized.

C. Vocational and educational guidance.

II. SCOPE OF PROPOSED PROGRAM

With due regard for the indications given in the directive, the UMT program, as outlined in the report of the President's Advisory Commission on Universal Military Training, has been analyzed to identify all objectives and projected activities to which personnel measurement or research can make a substantial contribution. Not all of these contributions are of equal significance or urgency and by no means are all of them unique to UMT. Solutions to all of the research problems indicated cannot be completed within a two-year period; some will require much longer. Nevertheless, formulation of a complete program of personnel measurement in UMT necessitates consideration of the total picture. The various aspects of research are, therefore, listed below and discussed separately in more detail later in this report. Specific considerations related to proposed research and relationships of UMT to research in progress are outlined in the attached Research Program Plan (Tab A).

A. Allocation of trainees to Army Ground Forces, Army Air Forces, Navy, Marine Corps and Coast Guard.

- B. Selection of training staff for Army-operated UMT establishments.
- C. Screening of potential UMT trainees to eliminate the psychologically unfit.
- D. Identification of special training needs, e.g. literacy training.
- E. Evaluation of individual progress in basic training.
- F. Classification of trainees:
 - 1. during initial six months' training.
 - 2. for options subject in part to military control.
- G. Vocational guidance of trainees.
- H. Selection for subsidized training.
- I. Development of National Registry.
- J. Appraisal of training program policies, procedures and techniques. ^{1/}

III. RELATION TO OTHER SERVICES

The problems and procedures of applying personnel measurement and research to UMT are not unique to the War Department, but are duplicated in the other services as well. Certain problems, e.g. allocation of trainees and planning for a National Registry, cannot proceed to a solution without joint planning. The remaining problems, e.g. initial screening, classification of trainees and selection for options, can be worked out separately for each major service. To do so, however, would involve a high proportion of duplicated effort and would probably result in less effective results than could be obtained by a single coordinated attack. Moreover, the time available for planning and the long-term character of the program make a planned, coordinated attempt to reach a sound solution more feasible than it was during the War when the emphasis was on reaching a workable solution "by Tuesday." A major recommendation of this report, therefore, is that consideration be given to effecting a coordinated research program which will lead to uniform battery of basic personnel measurement instruments for all major services. Such a uniform

^{1/} This appears to be a responsibility of D/O&T. It is noted here because of its relationship to the measurement results and the research techniques which will necessarily be developed in connection with this present study.

battery would not preclude recognition of the personnel problems which are unique to each service but would result in economies in development and in operation which could not possibly be attained without it.

IV. ALLOCATION OF POTENTIAL UMT TRAINEES

The method of allocation of potential trainees among Army Ground Forces, Army Air Forces, Navy, Marine Corps and Coast Guard requires study. This allocation must be accomplished with regard to the specialized competing and complementary needs of the several services for men trainable in their respective specialties. It cannot be simply left to the trainees' wishes or to uncontrolled competition among the services. A plan for equitable allocation of skills should be developed in the light of War Department needs and coordinated with the needs of the other services. It may be that the most adequate plan feasible will be assignment by lot, but this solution should not be adopted without careful consideration of other alternatives. A uniform selection and classification battery would permit much of the necessary classification testing of inductees at this stage of processing rather than after allocation to a major service. Planning for allocation should give full consideration to the technical and research aspects as well as to administrative considerations.

V. SELECTION OF TRAINING PERSONNEL AND EVALUATION OF THE TRAINING OF SUCH PERSONNEL

A. Introduction - The President's Commission recognizes the crucial nature of these problems:

"This program will depend largely upon the quality of leadership, competence, and character in the men who are in charge of the training at all levels. There is no place in the program for the officer who does not have the qualities which we would want our young men to have....The providing of the required number of qualified trainers presents the greatest single operating difficulty in this program, and failure to do so would mean failure of the program itself.... Before undertaking an assignment in the training program, each such trainer must be given a certain minimum amount of instruction."

B. Selection - The selection of training personnel for the extended UMT program should be implemented by the development and validation of measures designed to select the type of individual who can most effectively operate as a UMT trainer. The validation and restandardization of existing measures should be undertaken to this end.

It should be noted that the application of personnel selection techniques to the problem of selecting training cadres, though of exceptional importance in the UMT program, may prove applicable to the selection of

training cadres for other types of training as well. Methods developed for the selection of UMT instructors should also be scrutinized for applicability in the selection and assignment of other instructional staffs.

C. Appraisal of training progress - Consideration should be given not only to the selection of the cadre members, but also to the evaluation of their effectiveness in that assignment as well as to determining the extent to which they have gained proficiency as training leaders through the proposed period of instruction in training procedures. This latter aspect of the overall program, though important, is less pressing than others.

VI. SCREENING OF UMT TRAINEES

A. Introduction - Even though Universal Military Training is designated as universal, there will be those who are psychologically unfit to prepare for any form of useful military service to their country and others where the returns will not justify the expenditure of training time. This problem already exists in the Army and is not unique to UMT, although the broadened base of recruitment introduces added complications. Research in progress can be adapted to the present program revised on the basis of such research to increase its efficiency in predicting success in basic military training. This adaptation should give consideration to reinstituting with necessary modifications, the induction station test battery. The possibilities of devising mass-testing techniques for this purpose and of integrating this program with uniform classification testing should be explored.

B. Impracticability of local testing - The Commission's Report proposes that "in time it will be possible, in cooperation with the local high schools, to conduct locally much of the necessary testing which now absorbs so much of a man's time at the outset of his experience with the armed forces." The wartime experiences with Selective Service which necessitated the extensive program of induction station testing make it clear that selection and classification testing through the local high school or other local agency outside of armed services control is not feasible. If undertaken, it will almost certainly be necessary to duplicate the testing under such control. The tests to be given and the conditions of administration should be developed jointly with Air Forces, Navy, Marine Corps and Coast Guard in order to develop a common screening program integrated with the program of classification testing.

VII. IDENTIFICATION OF SPECIAL TRAINING NEEDS FOR SPECIAL TYPES OF TRAINING

A. Introduction - Even though the program of training is universal, the Commission's Report states that "recognition can and should be given in any universal program to the ways in which a particular individual is best fitted intellectually and physically to contribute to the common welfare." Among such needs for specialized training and/or treatment as

recognized by the Commission Report are literacy training, identification of the potentially maladjusted for special psychiatric and mental hygiene treatment, and identification of potential leaders. Testing for these purposes should be integrated with initial screening and with initial classification testing using a uniform basic battery for all the major services.

B. Literacy training - Screening for minimum mental level and selection for literacy training can be met initially by incorporating in the UMT screening battery the tests and procedures developed for induction station referral to Special Training Units. These tests and procedures may, after the program is under way, be studied for revision, particularly looking toward group tests to replace individual tests.

C. Emotional instability - The individual who evidences potential or actual emotional instability should be identified at the earliest possible moment for remedial or preventive measures. The use of screening devices adapted to mass testing to validly identify trainees for psychiatric diagnosis or treatment is an integral part of a UMT testing program. This problem, like many others, is not limited to UMT but occurs throughout the Army. The Army Personality Inventory developed as a part of classification testing should be validated separately with regard to its use in UMT. Additional measurement techniques adaptable to mass testing should be developed and validated for predicting emotional and social maladjustment as they occur in UMT.

D. Physical or psychophysical impairment - The attention of the Surgeon General should be directed toward the need in UMT for a program of special assignment and/or remedial training of those with special impairment, e.g. defective vision. The use of psychophysical tests of vision, hearing, coordination, and general physical fitness should be developed as an integral part of such a program. This office will, of course, be glad to cooperate with the Office of the Surgeon General in research studies relating to such a program.

E. Potential leadership - Potential leaders should be identified at the earliest possible stage. These trainees will be those who can profit most from assignment as acting NCO's and from special leadership training. The composite scores on potential leadership, supplemented by additional valid evidence as it becomes available throughout the training, will be an important basis of classification throughout the trainee's career in UMT whether in basic UMT, branch or service training, reenlistment in UMT or any of the other options.

The modified BIR, recommendation blank and military report form used in selecting BM for officer training, and the instrument developed in connection with leadership schools should be integrated into the UMT classification program. As a special project, the use of standard

training situations for the systematic evaluation of leadership e.g. an extension of the Combat Reaction Course being studied in leadership schools, should be investigated.

VIII. EVALUATION OF INDIVIDUAL TRAINING

A. Introduction - An immediately obvious application of personnel measurement in relation to the UMT program is the evaluation of the individual's progress in basic training. The wide range of individual differences included in the training population makes it certain that there will be similar differences in the effectiveness with which those individuals have learned and profited from that training. Accurate evaluation of that progress is needed, not only as an aid in the future classification of the trainee, but as a means of evaluating the various aspects of the training program in relation to how well the training is meeting the objectives set for it. These progress measures should be related directly to the content and objectives of training, and should test for functioning knowledges, skills and understandings rather than calling merely for regurgitation of undigested chunks of training materials.

B. Development of measurement devices - Technical staff assistance should be made available to the training instructors in the construction, standardization, and use of paper-and-pencil tests, performance tests, rating scales, and controlled observation reports in evaluating individual progress in training. Guidance should be given in the use of these proficiency measures in analyzing individual strengths and weaknesses in relation to assignment, in analyzing the effectiveness of instructional methods, and in introducing modifications on a planned basis. An objective of UMT is, as stated in the Commission's Report, to provide "without sacrificing essential military objectives, the maximum advantages in terms of . . . character development and training for citizenship." To the extent this is accomplished, the evaluation techniques should include measures of attitudes, individual and group morale, and the habit patterns of basic citizenship, as well as the more familiar measures of proficiency and achievement. To the extent that suitable basis for comparison can be established, the measures of UMT progress constitute a basis of appraising the total impact of UMT on those trained. If resources are available, such studies should be undertaken in order to provide factual basis for answers to the question "What is UMT doing to our youth?"

IX. CLASSIFICATION OF TRAINEES

A. Introduction - This is another problem which is not unique to UMT but is present in current ROTC's. Certain new classification needs, particularly relating to options, are introduced by the UMT program. Initial classification for basic training in UMT, assignment to training companies and branch specialization during the initial six months will present difficulties unless adequate time is provided for classification testing during initial processing. Even then classification assignments

should be considered tentative and subject to revision at the end of the six-month basic training. Such revised assignment would take into account the records of training progress as well as the results of classification testing.

B. Branch of service classification - The classification battery for recruit training centers including interest measures, to be developed and validated under a current research program will provide the principal basis for UMF classification. The problem of classification on the basis of branch or service rather than MOS presents serious difficulties. It is presently planned to group MOS's into 8 to 10 broad areas, e.g. combat soldier, clerical administrative and fiscal occupations, construction trades, branch trades, etc., and to test the individual for psychophysical fitness, aptitude, and interest in these areas. Each branch or service is characterized by a distribution of T/O allotment among these occupational areas. The method of relating the individual's pattern of abilities to the branch or service pattern of requirements is a problem for research. Any such program is far more effectively carried out under procedures calling for central assignment.

C. Vocational or trade school training - Like classification for basic training, classification for the options presents few, if any, problems not currently under study. Whether technical training is given at a service school or at a civilian trade or vocational school, the training is essentially preparatory for a military MOS and the basic classification battery to be developed, with special validation studies in relation to success in civilian trade schools, would be appropriate. The development of new instruments would be undertaken only to close up gaps which this validation might reveal. This problem and the related ones of college level technical training and of grants-in-aid for technical training emphasize the need for classification batteries at two levels, the second to provide high-level measures of ability.

A primary problem raised in connection with the options of technical training (at either the college or trade school level) in subjects of value to the military in time of emergency is the development and maintenance of a current list of such subjects and the continual evaluation of that list in the light of supply and demand in each category of trained specialists. Facilities and resources beyond the War Department, (e.g. in the U.S.E.S. and the National Registry to be established as an essential part of UMF) are required to provide a complete answer to this problem. Planning should include the listing of these specialties, procedures for identifying those in short or critical supply and for directing qualified trainees into shortage areas. Planning should also recognize the military concern with the accreditation of training programs and the maintenance of standards of training such that minimum military needs are met by successful completion of a course of training.

D. College training in technical specialties - The prediction of successful completion of college-level technical training will require

separate validation of the basic classification instruments particularly the ROTC qualifying examination. The resulting battery should provide part scores reflecting the independent factors contributing to college success (including nonintellectual factors) and differential prediction of success in the various college curricula. It is not contemplated that specially developed tests will be required initially.

E. ROTC training - Selection for ROTC and evaluation of ROTC progress as an option of UMT is not radically different from that now covered in a current research project. Modifications will be necessary to the extent that a universal program of six months' basic military training introduces changes in the nature of the present ROTC course.

F. Service Academy - Selection for admission to West Point from UMT is covered by research already in progress. Procedures for preliminary screening of an increased number of applicants for West Point Qualifying tests will probably be needed, based on information developed during basic training.

G. Subsidized college training - Selection for subsidized training at the college level should be based exclusively on the principle of choosing those men with the greatest probability of success in carrying out the purpose of the grant-in-aid. This program calls for rigorous selection of the relatively few best qualified from an already highly qualified group of applicants. The need for a high-level classification battery is particularly apparent here in order to discriminate at the highest level of ability. At some time special attention should be given to the Commission's proposal to reserve a certain number of scholarships for chaplaincy training. It is doubted that existing tests will be adequate to select those best qualified to serve as chaplains.

H. Subsidized vocational training - The high-level classification tests mentioned above should be developed for validity in selecting scholarship applicants for civilian technical or trade school training.

X. VOCATIONAL GUIDANCE OF THE TRAINEE

A. Introduction - The Commission's report and the cited directive alike emphasize the importance of vocational guidance of trainees as a substantial subsidiary benefit of the UMT program. The Commission's report recognizes the importance of vocational guidance in the following words:

"There is a great opportunity in this program for extending vocational guidance which would be of great benefit to every man in selecting the right occupation and in deciding what further education, if any, he should undertake. The armed forces already include a great deal of individual testing as a part of their regular program on classification

and assignment. It is entirely feasible to supplement this program with vocational aptitude tests which could, together with the results assembled from the trained observation of persons during the basic period, provide a sound basis for individual counselling. We recommend that this constitute a mandatory on-duty portion of the program. Such a program could be of inestimable value to many individuals and of long range benefit to the country."

A program of vocational guidance, though based upon accurate personnel measurement information, includes much more. There must be authoritative, complete occupational information covering the nature of vocational activities, conditions of work, employment opportunities, training requirements and training facilities. This information must be assembled for the effective range of civilian employment and made available in a form adapted to 18-year olds. Besides the resources of the Manpower Analysis Section of this Branch, the United States Employment Service, United States Office of Education, and the proposed National Registry are appropriate sources of such information. Its preparation for the use of trainees might well be handled by Information & Education Division. These two types of information - one relating to the individual and the other to the occupation - must then be integrated and interpreted to the trainee through skillful counselling.

B. Vocational testing - As the report recognizes, the testing program to be established for classification purposes in UWT contains the bulk of the pertinent test information needed for vocational guidance. Supplementation should be in the direction of any civilian occupations not already represented by MOS counterparts in the battery of tests. This might or might not entail the construction of additional instruments. It would certainly call for the additional validation of the existing instruments in terms of civilian as well as military occupational specialties. This program of testing for vocational guidance can thus be integrated with the classification testing program, particularly as directed toward UWT options. Since this latter program will cover the range of technical training, it will necessarily be related to occupational lines of activities.

C. Vocational counselling - A research project which should be undertaken before a program of vocational guidance counselling is completed is a thorough scientific analysis of the counselling interview. The research should identify the objectives of such interviews, compare the interview with other methods in the attainment of these objectives, validate various counselling techniques, determine the techniques of maximum effectiveness with minimum expenditures of time, and establish SOP and training techniques for counselling. The possibilities of substituting objective devices and procedures for expensive interpersonal discussion and of replacing the variable, subjective judgment of the interviewer by interview aids or other more objective procedures should be investigated. A large proportion of a half-million trainees annually assigned to the

Army will be interviewed for periods of 15 to 120 minutes. Thus the total hours of skilled personnel to be expended on these counselling interviews more than justifies the research required to shorten time required for effective counselling.

XI. DEVELOPMENT OF NATIONAL REGISTRY OF SKILL, APPTITUDE AND PROFICIENCY

A. Introduction - Since one of the important functions of Universal Military Training is to provide a reservoir of trained men who can be mobilized on short notice, the maintenance of an "up-to-date registry of all men who during the preceding six-year period have undergone basic training" is an important object in itself. "The purpose of such registry is to permit quick and accurate handling of personnel for the most effective use of their skills and previous training in time of war."

It is obvious that an important part of the information maintained in this registry would include the results of the various assessments of the individual's skills, aptitudes and proficiency. These results will be available through selection testing for induction, the application of diagnostic measures, classification testing, any results of the selection for technical or advanced training and the evaluation of individual progress in basic training. The determination of the types of information to be included upon the Registry card and its design for most effective recording and most convenient use are basic problems to the success of the program. Whether the registry is maintained through the individual local board or on a central basis, it is imperative that essential information be collected and that the information be recorded in a form to promote its most efficient and effective use.

B. Planning for registry - Planning for the National Registry extends beyond the scope of this Section and, indeed, of the Army. Nevertheless, Army needs must be considered in any such planning. It is recommended that this Section be represented in the joint planning for such a registry. Such planning should assure that the information available as a result of UMT and needed in connection with later entry into military service e.g. enlistment, CCS, ORC, or direct commissioning is available for such use. The use of such information in selection for a particular type of service will constitute separate research projects.

On the basis of experience, it is strongly urged that the National Registry be maintained on a truly national basis with a central file of skills and qualifications available against the need for immediate mobilization. The information collected during UMT as well as that collected by local boards, together with reports of their action on deferment, can be reported to the Central Registry and coded and punched on IBM cards to establish a nation-wide Registry from which all pertinent information about manpower, skill, and qualifications resources of the nation can be assembled on a national basis at a moment's notice. The feasibility of a registry containing potentially six million names with annual reporting

is evidenced by the Social Security registry of 70 million with quarterly reporting. The task of keeping tabs on six million is not reduced by parceling it out to local boards; rather it is reduced by the use of machine equipment which becomes possible only with a central registry. Moreover, such a central registry would not usurp the decision-making power of the local board, but rather would free it from bookkeeping detail and enable it to exercise its basic function more effectively.

XII. APPRAISAL OF PROGRAM, POLICY, PROCEDURES AND TECHNIQUES

The assignment given in the directive goes beyond the problem of testing people to include use of the same techniques in appraising the effectiveness and adequacy of various aspects of the UMT program and in comparing the relative effectiveness of alternative policies and procedures. Personnel research can be used in program appraisal, in evaluating the effect of personnel policy, and in reaching decisions on techniques and procedures. It is recommended, therefore, that D/P&A direct the attention of the interested offices to the proposed availability for those purposes of such techniques and, in particular, to the usefulness of the measurements to be developed for the evaluation of individual progress in UMT. These test results, including measures of attitude, understanding of citizenship obligations, and individual morale will provide invaluable facts on which to base policy and procedural decisions regarding UMT. Moreover, the research methodology applicable to personnel is equally applicable to program appraisal. To the extent that staff and resources are available, this office would be glad to undertake research in this area as requested by appropriate directive. Such research, if undertaken, should be based on a typical UMT set-up to provide a full range of problems and adequate testing of proposed solutions.

XIII. SUMMARY

A. The UMT program has been surveyed to outline a long-term plan of research on personnel measurement as applied to UMT. It is clear that the full scope of the research program outlined here is not likely to be accomplished in two years. Work, however, can be initiated in each major area and the immediate pressing problems marked for completion. The major research areas identified are recommended for integration with existing projects or are outlined as separate projects under a UMT research program in the attached Research Program, "Personnel Research Applications in UMT." The major areas, with reference to the pertinent paragraphs of this report, are listed below.

Paragraph Reference
to this Report

IV	*Allocation among services
V B	Selection of training personnel
V C	Evaluation of training progress
VI A	*Screening for minimum intelligence
VII B	Literacy training
VII C	Emotional instability
VII D	Physical handicaps
VII E	Leadership potentialities
VIII B	Evaluation of trainee progress
IX B	Basic and advanced training - branch or service
IX C	Technical training - trade school
IX D	College technical training
IX E	ROTC selection
IX F	West Point
IX G	Subsidized college training
IX H	Subsidized trade school training
X A	*Occupational information
X B	Vocational aptitude testing
X C	Counselling techniques
XI B	*National Registry
XII	Program appraisal

* These projects require joint planning with other major services or other Federal agencies. All of the projects listed can be effectively implemented on the assumption of basic personal measurement instruments and procedures which will be uniform among the services.

XIV. FURTHER RECOMMENDATION

In order to confirm and extend the recommendations of this report, it is further recommended that a Commission of Personnel Measurement Specialists appointed by the Chief, Personnel Research Section, be designated to study the operations of the Experimental WMT Unit at Fort Knox to advise further on the applicability of personnel research to the WMT program.

PRS/RAS
CIN/amm
PR-4107
29 August 1947

TAB A

RESEARCH PROGRAM PLAN, PR-4107

STUDIES ON THE APPLICATION OF PERSONNEL RESEARCH TO THE
UNIVERSAL MILITARY TRAINING PROGRAM

I. PROBLEM

A. Authority

WD Disposition Form WDOPA 35UMT, 16 June 1947, subject, "Study on the Application of Personnel Research to the UMT Program," Reference is also made to PRS Report 747, "Personnel Measurement in UMT," 29 August 1947.

B. Scope of Problem

1. The D/F referred to in paragraph A directs preparation and submission of

"a study on the problem of applying to the UMT Program the best possible personnel management principles, particularly including personnel testing or measuring devices. This study will proceed upon the bases that wherever possible existing personnel tests now employed within the Army will be used or adapted to UMT use and that, whenever necessary, within a two-year time limit under existing budget limitations and personnel strengths any new personnel research instrument or device required for application of sound personnel management in UMT will be projected as a recommendation."

2. PRS Report 747 identified in paragraph A outlines the overall problems of personnel measurement and research as applied to UMT. Certain aspects of the problems outlined there can readily be included in Personnel Research Programs already in progress. Others are of such long range character that immediate action does not appear feasible.

The present program embraces those research activities introduced by or peculiar to UMT - in particular, procedures for equitable allocation of trainees among the services, selection of training cadres, development of procedures for evaluating trainee progress vocational guidance procedures (other than aptitude testing), selection for subsidized college training, planning for technical training needs and planning for the skills and qualifications inventory to be maintained by the proposed National Registry. Specific parts of other programs, as they bear directly

on UMT, may be later transferred to this program or carried in part by it as a convenience in the planning of field trips, collection of data, etc.

C. Potential Value

UMT will constitute the principal, and ultimately perhaps the only, avenue of entrance to the regular Army as well as providing the basis of a trained reserve augmented at the rate of approximately a million men a year (500,000 to be trained by the Army). It will have tremendous impact also upon the general educational pattern of the country and upon its vocational and technical resources. The use of the best available scientific procedures for selecting, screening, classifying, training, counselling and assigning this group of a half million 18-year-olds has obvious potential value in achieving both the primary and the secondary objectives of the UMT program, even though this value cannot now be expressed in quantitative or even objective terms.

II. PROPOSED METHOD OF ATTACK

A. Exploratory studies

The proposed structure and organization of the UMT program within the Army should be studied to ascertain the methods of operations and the place of personnel research procedures among them. A part of this survey should include a field visit to the Experimental Unit at Fort Monmouth in order to project from its operations the probable form and functioning of a unit of the full UMT program. This projection should take cognizance of any special characteristics of the experimental program. The research reports of RAS and relevant psychological literature should be surveyed for applicable techniques, procedures and findings. This has been done to a very limited extent in the preparation of RAS Report 747.

B. New Instruments

Most of the instruments available for the special studies of this program are already available or can be readily adapted from existing instruments. Additional instruments needed for specific projects cannot be foreseen at this time.

C. Projects under PR-4107

4107-01. Allocation of trainees among the major services. The experience under Selective Service, the needs of Army Ground Forces, Army Air Forces, Navy, Marine Corps and Coast Guard for special categories of trainable reserves, and the proposed registration and induction procedures of UMT will be studied to prepare plans which will provide equitable allocation of potential trainees among the major services. Such plans will look to identifying the major measurable variables in terms of which the Army's manpower needs can be projected, estimating from available

data the distribution of Army needs and population resources along each major variable and devising a method of pre-induction allocation which will provide the best fit of needs to resources. The development of the plan will require coordination, not only with the branches of the War Department interested in manpower resources, but with corresponding units of the other major services so that a single coordinated plan can be developed applicable to Air Forces, Navy and Coast Guard as well as to the Army. Although it may well be that the most adequate plan feasible is allocation by lot, this plan shall not be adopted without exploring the possibility of other, potentially more effective alternatives, particularly those assuming a basic classification battery uniform for all major services.

4107-02. Selection of training cadre personnel. Subjects should represent the training corps at the experimental training unit and at least one training company from each RTC (including for one RTC the supporting and staff echelons). Buddy ratings, ratings by superiors and nominating techniques will be used to develop criterion measures on effectiveness as a UMT training officer or cadre member. BIB items, forced-choice lists, using self-description and associates' ratings, rating check-list forms and revisions of officers and enlisted men's biographical information blanks will be developed for the prediction of this criterion. Other personnel information routinely available, e.g. AGCT and other classification test scores, will be studied for its value in predicting effectiveness as a UMT instructor. The investigation will proceed on the assumption that effectiveness in training 18-year-old trainees can be identified and predicted and that an important aspect of such effectiveness is independent of the subject matter taught. Effectiveness in each principal technical specialty will be investigated separately. Separate criteria and selection procedures will be developed for officers and for EN. Methods of evaluating efficiency as a UMT training staff member will be devised.

4107-03. Psychophysical tests in UMT. The training of those with mild physical impairment which is not disqualifying for limited assignment but which calls for modification in the training program requires measurement of sensory and sensori-motor abilities. The UMT program and plans as applicable to this special group will be surveyed to determine the types of psychological measures needed and, on the basis of such survey, existing measures adopted or new measures developed. The program of adaptations and/or development will include the validation of the measures against job and task requirements, both at the critical cut-off points and in terms of performance above the minimally accepted level. Vision, hearing and sensori-motor coordination appear to be the areas of most immediate application.

4107-04. Development of Procedures for Evaluating Trainee Progress. Staff assistance will be made available to the instructional staff of the Experimental UMT Unit to provide training in the construction of functional paper-and-pencil and performance tests, rating schedules and other objective measures needed to evaluate the desired training outcomes of the

initial six months of basic UMT. One test technician from PMS should be detailed to Fort Knox for a month to work with the instructional staff in developing the necessary skills for the construction of proficiency measures, to assist in the construction of sample instruments and to instruct them in the use and interpretation of such measures in evaluating individual progress, and in appraising the effectiveness of instruction. Arrangements should be made for a return detail of one to two weeks during a subsequent training cycle for follow-up purposes. Arrangements may be made for reporting the tests developed and the results of their administration to PMS for standardization and validation. The appropriateness of the General Military Information Test should be investigated as a part of this project. Since the Experimental Unit may not be wholly typical of projected UMT units, the material developed should be considered tentative pending standardization and validation on actual UMT populations. Preliminary standardization on carefully selected populations from Training Divisions should be considered. As additional UMT units become operative, assistance should be given the instructional staff in the development and use of such measures. To this end training material should be assembled or developed and organized into a manual.

4107-05. Vocational Guidance Information. A survey will be made of existing and potential sources of occupational information suitable for the vocational and educational guidance of 18-year-olds, including relationship between UMT experience and civilian vocations. The survey will result in an SOP for the collection, organization and use of occupational information in UMT guidance programs. It will not extend to the actual operations under that procedure. The information considered should include, not only duties, work conditions and training requirements, but an assessment of opportunities in terms of projected demand and supply, acceptability of the vocation as a choice (prestige value, etc.), and techniques for the grouping of civilian occupations into job families within which aptitudes are equally applicable and skills are more or less transferable. To the extent possible, occupational requirements should be stated in terms of measured or measurable aptitudes and abilities. This project will involve cooperation with the Manpower Analysis Section of this office.

4107-06. Validation of Vocational Guidance Techniques. The objectives of the vocational guidance process will be analyzed and stated in terms which can be subjected to measurement. Some of these objectives appear to be related to identification of the optimal vocational recommendation, others to the presentation of information to the individual so that he will make the optimal choice and undertake the necessary action to implement his choice. Criterion measures will be developed for each objective as a basis for validating various ways of achieving it. On the basis of present knowledge, standard techniques to achieve the principal objectives will be established for the conduct of the vocational guidance process. Proposed modifications of the standard techniques will be the basis for research. Such modifications might relate to the use of questionnaires and check-lists, of standard interview patterns, and of techniques for training counselors. Other modifications promising increased efficiency will also be investigated.

4107-07. Validation of ROTC Qualifying Examination for Prediction of College Success in Technical Specialties. In addition to ROTC, UMT trainees have as an option general college training in a technical specialty of military value. Certain outstanding candidates will be subsidized. For those who are not subsidized, UMT will probably not deny this option to anyone on the basis of fitness provided he can be accepted in an appropriate educational institution. It can, however, recommend for or against such an option for an individual and can recommend admission procedures and standards for institutions whose training is to be accepted. The data on college success available for those taking the ROTC qualifying examinations will be studied to determine the effectiveness of that instrument in

a. screening those whose probability of success is so low that they should be discouraged from college as an option.

b. predicting differential success in various college curricula.

c. discriminating among those whose probability of outstanding success is so high that they should be subsidized.

If necessary, other instruments will be designed as improvements on the ROTC qualifying test in terms of greater coverage of differential aptitudes, or of more effective discrimination at the critical scores for screening or for subsidization. Relevant research on the AST Program will be reviewed for applicability. The possibility of improving the prediction of college success through measurement of such non-intellectual traits as interest or motivation will be studied.

4107-08. Military Needs for Trained Specialists. As a necessary step in executing the foregoing projects, an estimate of the needs for various specialties and a basis for revising these estimates will be secured, utilizing to the fullest the estimates already available. How should the number of individuals "guided" into mechanical trades be related to the number "guided" into clerical or fiscal occupations? What college courses (in addition to ROTC) will be accepted as fulfilling the UMT options? In what areas of college training will subsidization be undertaken? These questions require answers before the foregoing projects can be brought to "useful stage of completion." The development of the answers and of means for revising and refining the estimates is of sufficient scope to warrant its establishment as a separate project.

4107-09. Development of Recommended Procedures for Establishment and Operation of a National Registry. On the assumption of a National Registry to inventory potential skills and qualification resources of the proposed trained reserve, the personnel information necessary for such a Registry will be identified, IBM codes established for its recording and procedures devised for reporting, recording, maintaining and utilizing the information in planning and in the event of mobilization.

D. Relation of UMT Program to Other PRS Projects.

Besides the relationships indicated in each project described above, this program plan assumes that other essential aspects of the UMT measurement program will be integrated with existing projects. Modifications in the organization of these projects may be desirable as UMT research needs are incorporated. These additional UMT needs in relation to current projects are:

1. PR 4081 - Screening for minimum intelligence and referral for literacy training.
2. PR 4086 - West Point - Selection Procedures for West Point Option, including preliminary screening of UMT applicants if necessary.
3. PR 4091 - Selection for ROTC Option.
4. PR 4100 - Classification Procedures.
 - a. Classification of UMT's for Branch training.
 - b. Selection for civilian technical and vocational training options.
 - c. Validation of classification instruments for grants-in-aid of civilian technical training.
 - d. Validation of classification tests for civilian vocations.
 - e. Validation of the Army Personality Inventory for identifying UMT's requiring special psychiatric or mental hygiene treatment.
5. PR 4105 - Potential Leaders School.
 - a. Validation of instruments for selection of potential leaders (NCO's).
 - b. Development of instruments to appraise face-to-face leadership proficiency.

E. Special Work of Non-research Nature.

Except as indicated in the project descriptions, none is foreseen at this time.

III. OPERATING REQUIREMENTS

A. Additional Personnel

Additional personnel will be required if substantial progress is

to be made within the next two years on the major researches outlined.

B. No unusual demands on Technical Information and Liaison or Statistical Units are foreseen. As the projects are further defined and assigned there will be routine preparation of instruments and processing of data.

C. Special Equipment and Supplies

A recorder will be needed for the analysis of interview techniques in connection with the improvement of guidance procedures. No other needs for special equipment or supplies are foreseen except as research on psychophysical tests may require them.

D. Necessary Clearances and Coordination

Close coordination with General Staff planning for UMT will be necessary in all phases. Allocation of Trainees, and Planning for a National Registry, as well as the application of other research programs to UMT, will require coordination with Air Forces, Navy and Coast Guard. The project on psychophysical tests should be coordinated with the Surgeon General and those on vocational guidance with Information and Education Division, WDGS.

E. Estimated Date of Completion

Separate dates will be set for each project in terms of need and scope. The project of greatest priority included here is selection of training cadres. Provisional instruments should be prepared by 1 October 1947, data collected by 1 January 1948, and a validated program ready for installation by 1 March 1948. The proposed initial program will be subject to revision in the light of additional data.

All principal projects should be completed through the first phase by 1 September 1949. Certain projects under this program and those carried in other research programs should be completed before then, some as early as 1 August 1948, on the assumption that the first UMT class will not be called before 1 October 1948 - six months after the earliest possible passage of the Act.

IV. PERSONNEL IN CHARGE

A. Program Coordinator - Dr. Charles I. Mosier.

B. Statistical Adviser - Mr. B. J. Winor.

V. REPORTS TO BE PRESENTED OUTSIDE PHS

To be determined.